

REMARKS

This is intended as a full and complete response to the Final Office Action dated April 27, 2009, having a shortened statutory period for response set to expire on July 27, 2009. Please reconsider the claims pending in the application for reasons discussed below.

Claim Rejections Under 35 USC § 112

The Examiner rejected claims 1-4 and 8-22 under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. According to the Examiner, the term "locator device" in the claims is not supported by an enabling disclosure and it is unclear what structure allows this "locating device" to perform a locating function. Applicants respectfully points out that the term "locator device" is not in the claims. Further, Applicants note that the term "locator sleeve" is in the claims. Applicants believe that the term "locator sleeve" is fully supported by an enabling disclosure. For instance, Applicants respectfully direct the Examiner to paragraphs 0044 and 0046 of the published application which clearly state a locator sleeve 4 is movable along the tool holder (or object) into a desired position. Furthermore, Applicants direct the Examiner to paragraphs 0050-0051 and Figure 4 in the published application that clearly describe the locator sleeve 4. Additionally, Applicants direct the Examiner to Figures 5-6 and paragraphs 0055, 0056, 0057, and 0064 in the published application for additional disclosure relating to the locator sleeve 4. For these reasons, Applicants believe the term "locator sleeve" is supported by an enabling disclosure and respectfully request the § 112 rejection of the claims be removed.

Claim Rejections Under 35 USC § 103

The Examiner rejected claims 1-4, 8-10, 13-16 and 17-22 under 35 U.S.C. 103(a) as being unpatentable over Claesson (US 2002/0033083), Lundblad (US 2002/0083805) and Redmond (US 5,913,955). Applicants respectfully traverse the rejection for the following reasons.

Amended independent claim 1 recites, among other things, "at least one force exchange device attached to a locator sleeve surrounding the object, the locator sleeve is movable along a surface of the object." Claesson merely discloses a device having active elements 26, 27 embedded in a tool holder 23. Claesson discloses that the active elements 26, 27 are glued in recesses of the tool holder 23 and the active elements 26, 27 may be covered by a casting (see Claesson, paragraph 0029 and Figure 1). The arrangement disclosed in Claesson is clearly different from a force exchange device attached to a movable locator sleeve as recited in claim 1. Further, it is unclear to the Applicants what the Examiner meant on page 3 of the Office Action where the Examiner states that the active elements 26, 27 are operative to exchange a force having a force component directed at a right angle while parallel to the surface object. Lundblad merely discloses piezo elements 8 fastened on opposite surfaces on a shaft 1 intended to carrying cutting inserts of a tool during turning or milling. As shown in Figure 4 of Lundblad, the piezo elements 8 are placed in the area near the fastening end 2 of the shaft 1 opposite the cutting insert, thus in an area where the maximum axial elongation occurs during bending deformation (see Lundblad, paragraph 0040). It is to be noted that the piezo elements 8 in Lundblad are fastened directly to the shaft 1, and deflect the shaft by elongation in a direction parallel to the outer surface of the shaft. It is also to be noted that the piezo elements 8 are an integrated part of the shaft, which is clearly different from a force exchange device attached to a movable locator sleeve as recited in claim 1, and therefore Lundblad fails to cure the deficiencies of Claesson. Redmond merely discloses an apparatus having an actuator A1 placed in a recess P1 of a bar B1. As illustrated in Figure 1 of Redmond, the bar B1 is attached to rigid structure R1. As also illustrated in Figure 1, the actuator A1 is clearly placed in a direction parallel to the bar B1 in the recess. For these reasons, Redmond also fails to cure the deficiencies of Claesson.

As the foregoing illustrates, the combination of Claesson, Lundblad and Redmond fails to teach or disclose all the limitations of claim 1. This failure precludes the combination of Claesson, Lundblad and Redmond from rendering claim 1 obvious. Therefore, Applicants respectfully request the 103(a) rejection of claim 1 be removed

and allowance of the same. Additionally, the claims that depend from claim 1 are allowable for at least the same reasons as claim 1.

The Examiner rejected claim 1 under 35 U.S.C. 103(a) as being unpatentable over Redmond and Lundblad. Applicants respectfully traverse the rejection for the following reasons.

Claim 1 recites, among other things, a force exchange device external of a surface of the object, wherein the force exchange device is attached to a locator sleeve surrounding the object, the locator sleeve is movable along a surface of the object, and wherein the at least one force exchange device is operative to either exchanging a force having a force component directed at right angle to the surface of the object or exchanging directly or via a mechanical lever, a moment between the object and the device. The combination of Redmond and Lundblad fails to disclose these limitations. As set forth herein, Redmond discloses an actuator A1 that is mounted in a recess P1 formed near a root end of a bar B1 which is clearly different from an external force exchange device, as recited in claim 1. As also set forth herein, Lundblad discloses an apparatus having piezo elements 8 that are configured to detect an oscillatory motion of the shaft. As described in Lundblad, a control device identifies the frequency of the oscillatory motion and then causes a vibration damping device to generate a mechanical damping force having substantially the same frequency as the identified frequency, which is then applied to the shaft in a counter-direction to a velocity of the oscillatory motion. Therefore, Lundblad fails to cure the deficiencies of Redmond.

As the foregoing illustrates, the combination of Redmond and Lundblad fails to teach or disclose all the limitations of claim 1. This failure precludes the combination of Redmond and Lundblad from rendering claim 1 obvious. Therefore, Applicants respectfully request the 103(a) rejection of claim 1 be removed and allowance of the same.

The Examiner rejected claims 11-12 under 35 U.S.C. 103(a) as being unpatentable over Claesson, Lundblad, Redmond and Browning (US 5,558,477). Applicants respectfully traverse the rejection.

Claims 11-12 depend from claim 1. As set forth above, the combination of Claesson, Lundblad and Redmond fails to disclose all the limitations of claim 1. Further, Browning merely discloses a tool head 12 having an interior chamber 14 that contains an actuator mass 15. Browning further discloses a piezoelectric stack 17 that is positioned between one surface of the mass 15 and a floor 19, such that energizing of the stack will cause the mass to pivot about hinge 16. As such, Browning fails to cure the deficiencies of the combination of Claesson, Lundblad and Redmond. Therefore, the combination of Claesson, Lundblad, Redmond and Browning fail to render claims 11-12 obvious. Applicants respectfully request the 103(a) rejection of claims 11-12 be removed and allowance of the same.

Conclusion

Having addressed all issues set out in the Final Office Action, Applicant respectfully submits that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,



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